MUSEUM STORIES FOR CHILDREN

SERIES III

NUMBER ONE

SEPTEMBER 19, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

FIELD MUSEUM OF NATURAL HISTORY

Through the gift of Mr. Chauncey Keep, the Museum is able to show you this year a series of films on American History. The Museum stories, however, will not deal with history; but, as in other years, will tell you stories of Museum exhibits.

D. C. DAVIES, Director

CLOTH FROM INCA LAND

When you were very little children, did you believe that all American Indians wore clothing made of deer and buffalo hide before the white man came? Many of them did wear skin garments; but there were others, in both North and South America who made their clothing from well woven cloth.

In the color film this morning, you have seen pictures of the beautiful cloth made by the Indians of ancient Peru. Those Indians were very fortunate in having at hand two of the most important cloth materials, cotton and wool.

Cotton was raised by the people who lived along the coast, in fields watered by streams brought down, in irrigation ditches, from the mountains. Each person was allowed just enough water for a successful crop; and when the crop was gathered, it was placed along with those of the whole country, in one great storehouse. Later, one third of it was given to the Temple of the Sun, one third to the great Inca and the other third was divided evenly among all the people. Two kinds of cotton were raised; one, a bright golden brown, the other, white. You can see a reproduction of a growing cotton plant in Hall 28.

Wool was obtained from the camel-like animals of the inland,—the llama, alpaca and vicugna. Very coarse cloth, worn only by the common people, was made from llama wool. A finer cloth, worn by the nobles of the land, was made from alpaca wool. The finest cloth of all was made from vicugna wool; and all of it was reserved for the use of the great Incas. Llamas and alpacas, (you can find them and the vicugna in Hall 15) were domestic animals, used for carrying burdens and for food as well as for their wool; and even when the Spanish entered Peru, they had been tame for so many centuries that no one knew their wild ancestor. The vicugna was, and still is, a wild animal. Once a year, the reigning Inca ordered a great vicugna hunt. Thousands of beaters started in an immense ring and drove the animals toward one central place. There they were captured in nets; were sheared of their wool; and turned loose. The wool was taken to the Temple of the Sun; given to the sacred weavers; spun by them into thread; and woven into royal garments.

In spinning thread from either cotton or wool, the Peruvians used a small stick with a little round weight made of wood or clay attached to it. It was called a spindle; the little weight, a spindle whorl. By twirling the spindle, the cotton or wool fibres were twisted into yarn; and the yarn was then dyed with colors made from plants. The favorite dyes were red, yellow and brown; and they were so well made that the cloth dyed with them has not faded even to this day.

At the east end of Hall 8, you can find many beautiful examples of Peruvian weaving. Notice their colors and see if you can find the figures of men, birds, fish, cats, crabs and butterflies in their designs.

In case 48, you will find a small loom. It was on looms similar to this one that all Peruvian cloth was made. Robes were woven in one straight piece; and to be worn, had only to be tied or pinned about the shoulders. The ponchos, also in case 48, were made by folding a long piece of cloth at its center, cutting a slit for the head, and sewing the sides together as far as the arm-holes. Often a belt, like those in case 47, was fastened about the Indian's waist.

There is part of a feather covered poncho on the east side of case 47. Instead of having a woven design, it has one made by fastening feathers to strings and sewing them to a plain piece of cloth. If you will hunt for South American birds in Halls 20 and 21, you can find the source of the beautiful feathers.

In cases 42 to 46, in Hall 8, are other pieces of Peruvian cloth covering the mummies for whom they were made. Perhaps some of the mummies were, themselves, once weavers; for in their graves were found spindles, spindle whorls, thread and even work baskets. Just as some North American Indians wanted to take their bows and arrows with them to "the happy hunting ground"; so these Indians wanted their implements, necklaces, ear-rings, bronze knives and pins, stone club heads, clothing, dishes, food, and many other things, to accompany them to the next world. Their graves were made in the desert; and, as in ancient Egypt, the dry sand has preserved everything which it covered.

The mummies and cloth in our Museum came from Ancon; and we have no way of telling how old they are; for, when the first European, Miguel Estete, visited the plain in 1533, he found, even then, only a barren waste. The people, their city and all but faint traces of their life had disappeared before Pizarro set foot in Peru.

DOROTHY COCKRELL, Guide-lecturer.

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FIELD MUSEUM OF NATURAL HISTORY
ROOSEVELT ROAD AND LAKE MICHIGAN
CHICAGO

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D. C. DAVIES, Director

MUSEUM STORIES FOR CHILDREN

SERIES III

NUMBER TWO

SEPTEMBER 26, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

FIELD MUSEUM OF NATURAL HISTORY

"Skyland" is a name which has been given to the home of the Blackfoot Indians. The story will tell you about some of the things which those Indians did before the white man came.

D. C. Davies, Director.

THE DRESS OF A BLACKFOOT BRAVE

When you have seen "Skyland, the Home of the Blackfoot Indians" in the film, you will want to see the things, in the Museum collections, which were made by those Indians. Their home is in the far northwestern corner of the Great Plains; so you must look for their work in Hall 5, the Hall of the Plains Indian Tribes. You will find it in cases 25, 26 and 27.

As you look at the men's clothing, in cases 26 and 27, try to imagine the skill and the hard work that was involved in making it. For the robe, shirt, leggings and moccasins, the skins of wild animals had, first of all, to be obtained. The robes and moccasin soles were made from buffalo hide; and hunting buffaloes was one of the hardest things which the Indian men had to do.

Before white men gave the Indians guns, buffaloes were killed with bows and arrows or clubs after they had been driven into a pound. The pound was an enclosure, usually built at the foot of a cliff or high bank. Above it was the level land where the buffaloes grazed; and leading toward it, the Indians placed two rows of stone-piles in a great V. When the drive began, young men, working at some distance from the pound, gradually drove the herd toward it. As the animals passed the first of the stone piles, other men, who had hidden behind them, jumped up and with yells and waving of robes frightened the buffaloes into running further down the lane. There they were frightened by more and more men; and as they fled, the lane narrowed steadily; so that, when the leaders finally reached the edge of the cliff, there was no room to turn back, and they could only jump into the enclosure below. Like sheep, the buffaloes always followed their leaders; and when the whole herd was once in the pound, it was easy for the Indians to kill them.

Antelopes were also caught in a pound. Deer were captured in snares made of braided rawhide. They were left in the deer trails; and the hunter trusted their catching the deer to chance. Weasels, or ermine, and many other small animals and birds were also caught in snares.

The removal of an animal's skin was the work of the Indian men; but once removed, it was given over to the women; and its dressing and the cutting, sewing and decorating of garments to be made from it, were all their work. First of all, the skin had to be staked to the ground, all the flesh scraped away from it, the uneven portions pared down, and, if a smooth skin was desired, the hair scraped off. Bleached and dried, the product of this first process was rawhide. You will find quirts, rattles, drums, parfleches, moccasin soles, and many other things made from it in cases 25 and 26; and in case 26 are the fleshers and scrapers used in its preparation.

When skins were to be used in making clothing, soft bags or tipi covers, the rawhide had to be thoroughly oiled, shrunk with warm water, stretched, given a smooth grain by rubbing it with a rough-edged stone and, finally, dried and softened by pulling it back and forth through a loop of twisted sinews fastened to a lodge pole. In addition, deer skins were often smoked to give them a deeper color.

Buffalo robes were always worn by the men with the head of the animal to the left, the tail to the right. The painted, embroidered or beaded decorations usually extended from the head to the tail; and thus, when worn, went around the Indian's waist.

Shirts were made from deer, antelope or buffalo calf skins. Two skins were used to make the body of the shirt; and the sleeves were cut from one or two more. The ragged skin from the animal's hind legs hung down from the lower edges of the shirt; and all edges of the skins, except where they were joined at the shoulders, were cut in fringes. The leggings, too, had fringe cut on their lower edge and often on their side seam.

In sewing, the women used thread made from buffalo sinew. Broad bands of it were dried and stored each year. Shreds were pulled from the bands with the teeth, were softened in water, smoothed and twisted. In place of needles, large bone bodkins were used.

Shirts and leggings were decorated in several different ways. The Blackfoot Indians were especially fond of adding fringes of ermine skins to the sleeves and shoulders of their shirts. Each strand of the fringe required one entire skin; so, if there were a hundred strands, a hundred ermine had to be caught and their skins dressed.

Another favored decoration was a series of bands of porcupine quill embroidery. Usually, these bands were placed across each shoulder, down each sleeve and along the outside of each legging. The quills were dyed, flattened, folded so as to be of the proper length for the design and carefully sewed in place. After white men came, beads replaced porcupine quills almost entirely. The beads were strung on threads; and the strings thus made were sewed to strips of soft skin. Sometimes the quills or strings of beads were wrapped about the fringes to make them more handsome.

When you have seen the Blackfoot clothing, look at that made by other Plains tribes and see what differences you can find.

DOROTHY COCKRELL, Guide-lecturer.

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MUSEUM STORIES
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CHILDREN

SERIES III

NUMBER TWO

SEPTEMBER 26, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

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D. C. DAVIES, Director.

FIELD MUSEUM OF NATURAL HISTORY

MUSEUM STORIES FOR CHILDREN

SERIES III

NUMBER THREE

OCTOBER 3, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

FIELD MUSEUM OF NATURAL HISTORY

Some of the Museum's sharks, skates and rays are installed near the center of Albert W. Harris Hall. A new case is now being placed at the west end of that hall. When completed, it will show you these strange fish in their home at the bottom of the sea.

D. C. Davies, Director.

SHARKS, SKATES AND RAYS

Many strange things are found in the sea; but none of them are stranger than the sharks skates and rays. To begin with, these fish are unlike all others because they have a skeleton made largely of cartilage instead of bone and because the gill slits through which they breathe have no covers. If you examine the fish skeletons in the first case at the east end, north side, of Hall 17, you will see how the shark and ray skeletons differ from those of other fish; and in the fourth and fifth cases from the east end on the north side of Albert W. Harris Hall (Hall 18), you will find curious sharks, skates and rays having from five to seven gill slits.

Sharks are better known to most of us than the other members of the family because we have heard so many stories of man-eaters. All sharks eat animal food; and many of them like their food alive; but of the hundred and fifty different kinds of sharks, there are but few large enough to eat a man.

One of the large sharks which is greatly feared by people who live on the margins of the warm seas, is the Tiger Shark. The baby sharks which are mounted with their mother in the case near the center of Albert W. Harris Hall will show you where the fish gets its name. The stripes which are so dark on the babies gradually fade as the shark grows older and finally disappear. Tiger Sharks prey upon other sharks and upon turtles, crabs, swimming birds and fish. In fact, they apparently consider any animal which they find in the water a proper article of diet; and they must, therefore, be considered dangerous to man. The Tiger Shark sometimes grows to a length of thirty feet. It is seldom seen alone; but usually prefers to go with others of its kind in "schools."

The Tiger Shark sometimes visits our east coast; but far more often, the fishermen there are bothered by great schools of smaller sharks which, at certain seasons of the year, make fishing for mackerel, shad, etc., almost impossible. Of these, the Dogfish, which come in packs like wild dogs, are particularly troublesome. They swim along the fisherman's gill net and eat the fish caught there. They get into his pound nets and devour the catch. They take his bait from his line. They catch his lobsters both in and out of the lobster pots or traps; and, besides all this, they do great damage in tearing and destroying his nets and other fishing tackle.

For many years, fishing practically ceased during the shark season; but now fishermen are beginning to discover that the shark itself is useful and to catch it. The flesh of the Dogfish is canned and sold under the name of "Grayfish"; and the flesh of even the large sharks often finds its way to the markets as "Deep Sea Swordfish." Tanneries are being established on the east coast; and there leather is being made from the shark's skin. When the rough, horny, outer covering is left on it, it is called "shagreen" and is used, in America, mainly in polishing wood. When the outer covering is removed, a soft leather, suitable for shoes, luggage, pocket books, furniture covering, etc., can be made. The shark's liver is used for making an oil similar to cod liver oil; and its fins are sent to China to be used in making gelatine.

The Chinese have used sharks for food and their skin for making shagreen from earliest times. In the Blackstone Chinese Collection, Hall 24, you will find, in case 36, a Chinese saddle covered with shagreen. In Hall 32, case 52, are Tibetan saddles on which shagreen has been used; and a knife sheath of the same material may be seen in case 48. In the lower part of the first case of sword-guards in Frank W. Gunsaulus Hall (Hall 30) there is a beautiful Japanese sword with a hilt covered with shagreen.

In earlier geologic ages, sharks were much larger than they are now. Some of them grew to a length of eighty feet. Near the center of Hall 38 is an ancient shark's jaw with the jaw of a large modern shark mounted inside of it. Notice particularly the size of the teeth and be sure to read the label.

Skates and rays are little more than flattened sharks; but their teeth are, for the most part, neither as large nor as sharp as those of the sharks; so they have learned to defend themselves in ways other than by biting. The Eagle Ray is one of the Stingrays. It defends itself by lashing its tail back and forth and inflicting painful and dangerous wounds with the barbed spine or "sting" which is attached to the base of its tail. The Sawfish has a toothed saw on the end of its nose which it uses in fighting. The Torpedo, or Electric Ray, generates an electric current in a peculiar organ which lies near the back of its head. It uses the current to stun or kill the small fish upon which it feeds as well as for defense. It is said that a large Torpedo can give off enough electricity to knock a man down.

DOROTHY COCKRELL, Guide-lecturer.

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SERIES III

NUMBER THREE

OCTOBER 3, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN
CHICAGO

MUSEUM STORIES
FOR
CHILDREN

SERIES III

NUMBER FOUR

OCTOBER 10, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

FIELD MUSEUM OF NATURAL HISTORY

In H. N. Higinbotham Hall, you will find most of the Museum's gem collection. This story will introduce you to it; but to know it you should visit it many times.

D. C. Davies, Director.

BIRTHSTONES

Have you ever hunted for your birthstone in H. N. Higinbotham Hall (Hall 31)? These are the stones for the months:

January	Garnet
February	Amethyst
March	Bloodstone
April	Diamond
May	Emerald
June	Pearl
July	Ruby
August	Sardonyx
September	Sapphire
October	Opal
November	Topaz
December	Turquoise

This list is one adopted by the American Jewelers Association in 1912; but it was based on a list of birthstones that was far older—a list influenced, historians think, by the breastplate that an Egyptian priest wore 6000 years ago.

The story goes that long ago the high priest of Memphis wore a breastplate made up of twelve small objects which probably represented different Egyptian letters or hieroglyphics. He is shown wearing such a breastplate in a relief which was carved in stone about the year 4000 B.C. Priests continued to wear similar breastplates; and when the ancient Hebrews were in captivity in Egypt, they may have seen them. At any rate, when the Jews left Egypt, they made a like breastplate for Aaron, their own high priest.

This breastplate was composed of twelve large gems and on each was engraved the name of one of the tribes of Israel. It was handed down from one high priest to the next; and as it grew older its magic powers were believed to increase. It was one of the treasures of old Jerusalem; but after the fall of that city in 70 A.D., its history is lost. It is thought that it was taken to Rome by the victorious Titus and placed in the temple of Concord; and there it may have remained until the sack of Rome by the Vandals in 455; or it may have been taken to the new capitol, Constantinople, and thence returned to Jerusalem by Justinian; only to be taken by the Persians when they conquered that city in 615. Some historians think that it is still hidden away in some old Persian treasury; others, that it may now be in possession of the Arabs; and still others, that it was long ago destroyed.

Originally the twelve stones were supposed to stand for the twelve tribes of Israel; but as time went on, they were associated with the twelve angels of Paradise, the twelve foundations of Heaven, the twelve apostles, and, finally, with the twelve months of the year. But even after they had been assigned to the months, the people did not begin, immediately, to wear them as birthstones. In the Middle Ages, it was thought that each gem had a certain definite power over its wearer; and each person wore the gem that best fitted his need. A diamond, for instance, was supposed to give its wearer courage; an amber necklace, to cure sore throat; a cat's eye, to protect one from witchcraft; an amethyst, to make its owner shrewd in business matters. And when the stones for the months did, finally, begin to be worn, it is probable that the person who wished them to bring him specially good luck, obtained all twelve gems and wore them in turn.

The custom of wearing at all times the gem for one's birth-month originated sometime during the 17th or 18th century in Poland. Shortly before that time, there was a large immigration of Jews into Poland; and it is quite likely that the custom, based, as it was, on the ancient Hebrew breastplate, began with them. It was spread to all Europe through the agency of Jewish gem merchants. In the thousands of years that had intervened between the making of the breastplate and the adoption of birthstones; many new gems had been discovered. Some of them were more beautiful than the old gems; so changes were made and new gems took the place of many of the ancient ones on the list. Even today, many persons do not agree as to the proper stone for each month.

In H. N. Higinbotham Hall, you will find the gems arranged in order of their hardness. The diamond, the hardest stone of all, comes first; and last of all, come the stones which, although beautiful, are too soft to be worn in jewelry. If you read the labels carefully, you will have a complete story of every important stone.

Dorothy Cockrell, Guide-lecturer.

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MUSEUM STORIES FOR CHILDREN

SERIES III

NUMBER FIVE

OCTOBER 17, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

FIELD MUSEUM OF NATURAL HISTORY

In addition to the program announced for next Saturday, October 24th, Mrs. Edith W. Ware of the University of Chicago, will tell you the story of "Little King Pepi and the Dwarf." Her story will be illustrated with lantern slides and will begin at eleven a. m.

D. C. Davies, Director.

WILLING CAPTIVES

When you go to the zoo, which animals do you like best to see? The greatest crowds are usually near the monkeys, the elephants and the bears; and these, according to Mr. William T. Hornaday, the Director of the New York Zoological Park, are the animals that learn most quickly the lessons of captivity.

Elephants are found wild in two parts of the world,—in Africa and in southern Asia; but most of those seen in zoos are from India. The people of India have used elephants as beasts of burden for thousands of years. In fact, when western Europe was still a wilderness, East Indians were training elephants to carry passengers, to bear burdens of all kinds, to break down trees and pile logs and even to fight in the armies of the monarchs of India.

Elephants are still used in certain parts of India, although railroads and automobiles have taken their place to a large extent. The age at which elephants are large enough to work is between fourteen and sixteen years; but they eat too much to make it profitable for the Indians to raise them from the time they are babies; so they are allowed to remain wild in the jungle until they are fully grown. Can you imagine teaching tricks to an old, unbroken horse or to a dog who has outgrown his puppy days? There are few animals who can learn new things after they are grown; but elephants who have known nothing but free jungle life accept captivity and learn to do their master's bidding in a short time.

The elephants in the zoo have lessons to learn, too. First of all, they must learn to eat hay instead of the green fodder of their native jungles; to be peaceful; to obey their keepers but to have no fear of them; and to do certain simple tricks for the benefit of visitors. Deed-a-day, the Boy Scout elephant in Lincoln Park, is a Singhalese Indian elephant. Some of the false faces in Hall I, ground floor, came from his old home. He is twenty-six years old; but all of you who visited the zoo last summer know how well he has learned to behave. There is a skeleton of an Indian elephant in Hall 17. Be sure to notice his feet, his heavy head and his tusks. What has happened to his trunk?

There are many kinds of bears in Lincoln Park and in the Museum collections, see Halls 15 and 16. Bears will eat almost anything; so their diet is never a problem in the zoo. It is a problem however, to keep peace in the bear dens; for bears are often ill tempered; and even the best of them may have occasional fits of madness.

Of all the bears in zoos, grizzly bears are said to be the brightest; but European brown bears are the ones usually taught tricks. Most of the wrestling and dancing bears seen in circuses and on the stage are of this variety. Polar bears are hard to manage, because the expression on their face seldom gives any clue to their disposition. An angry polar bear looks almost exactly like a happy one. The black bear is quite even tempered. He likes to spend a good deal of his time climbing the tree in the center of his den. The Japanese bear and the little sun bear are both restless in captivity and rather ill-natured. Most of the bears are caught when very young. Old bears are apt to be quite untameable.

Even more popular than the bear pits and elephant quarters, are the monkey cages. There, monkeys, baboons and apes of all ages and sizes are to be seen playing, running, and performing tricks from morning to night. The older animals are sometimes quite sedate; but the young ones are never still. The swings, trapeezes and bars in their cage make a good substitute for the trees of their forest home.

Little trouble is experienced in our parks, with the smaller monkeys—particularly those from South America and India; but the larger baboons are apt to be savage. Notice, in Hall 15, the baboons' long jaws and sharp teeth. Troops of them live together in Africa and their prowess in fights has made them quite fearless.

We know little about gorillas as captives. Most of those which have been brought from Africa have died within a few weeks or months of homesickness or of cold. One famous gorilla, John, the pet of Major Penny of London, was trained to a remarkable degree; but he was not exhibited in a cage,—only allowed to live in the house as one of the family. At present, there are only one or two gorillas living in captivity in the whole world.

Both orangs and chimpanzees make excellent zoo animals and their string of tricks is almost endless. Old chimpanzees are apt to have far worse tempers than orangs. Lincoln Park has two chimpanzees; and you can find gorillas, chimpanzees and orangs in Hall 22 of the Museum.

DOROTHY COCKRELL, Guide-lecturer.

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CHILDREN

SERIES III

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FIELD MUSEUM OF NATURAL HISTORY

In addition to the program announced for next Saturday, October 24th, Mrs. Edith W. Ware of the University of Chicago, will tell you the story of "Little King Fepi and the Dwarf." Her story will be illustrated with lantern slides and will begin at eleven a. m.

D. C. DAVIES, Director.

MUSEUM STORIES FOR CHILDREN

SERIES III

NUMBER SIX

OCTOBER 24, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

FIELD MUSEUM OF NATURAL HISTORY

In addition to the program announced for today, Mrs. Edith W. Ware, of the University of Chicago, is to tell you a story of old Egypt, "Little King Pepi and the Dwarf." It will begin at 11:00 a.m. The Museum story today tells you how time was measured in ancient Egypt and other parts of the old world.

D. C. Davies, Director.

ANCIENT CLOCKS

Just a few weeks ago we had to set our clocks back to Central Standard Time, which, for this part of the country is the average nearest to sun time. Ever since people first began to count time, they have used the sun as a big master clock by which to set all the clocks around the world.

Some of the oldest timepieces in existence have been found in Egypt. These are the tall stone obelisks or pillars, made originally not as timepieces but as records of the honors and triumphs of the Pharaohs. Often they were set up beside the temples. Egyptian priests, while studying the heavenly bodies, noticed that shadows fell from the obelisks on the ground, when the sun was shining. They measured the shadows and found that there were changes with the rising and the setting of the sun. By marking off the surface on which the shadows were cast, a very simple form of sun dial was made. The great Roman emperor Augustus had an Egyptian obelisk brought to Rome so that he could use it for a gnomon, or sun shadow pointer. In Hall J, on the same floor with the theatre, you can find pictures and statues of Egyptian priests, and in Case 5 there is a very small bronze obelisk with a figure of the lion goddess at the front. This one is hollow, and inside it was found a little mummied animal.

Even before the Egyptians began to measure time, wise men of the East, from Babylon, Assyria, and Persia, were working out systems of telling time by years and seasons, months and days. Since they, too, made use of shadows cast by the sun, many people believe that the sun dial was a Babylonian or Chaldean invention. When the Babylonian priests made calendars they usually marked wedge-shaped letters with a bone pencil or stylus on slabs of wet clay. There are some ancient clay tablets used for records and also a reproduction of a bone stylus in Stanley Field Hall, Case 20.

The Greeks very likely learned about the sun dial from the Egyptians during the 6th century B.C., when many Greeks were pupils in Egyptian schools. Through the Greeks the Romans learned to use the sun dial. Since the sun dial could be used only while the sun was shining, a better kind of timepiece was needed; so a Greek inventor made a water clock that would work without it. At first the water clocks in Athens and in Rome were used to time public speakers in the law courts. If the trial was very important each speaker was allowed more time, and water was poured into the clock from large jugs called amphorae. In Edward E. Ayer Hall (Hall 2) you can find some of the bronze and pottery amphorae, and many other utensils such as were used by Roman and Greek families.

The water clock or clepsydra, as the Greeks called it, has been used in China for many centuries. The Chinese have a tradition that Hwangti, one of their very first emperors, invented it. Although the clepsydra is the old timekeeper from which we have copied the clocks of today, it works in a very strange way. One vessel pours water into a tube connected with a covered cup. Little holes in the bottom of the cup let water down through another tube into an open dish in which a float with a pointer is placed. As the water rises in the lower dish, the pointer on the float touches a scale on the side of the dish, and people read the time from the scale. Part of an old Chinese clepsydra you will find in Hall 24, Case 4, among the Blackstone Chinese collections.

Malay pirates sailing among the islands south and east of China may have copied the idea of the water clock from the Chinese; for in their boats they often carry buckets of water in which float cocoanut shells. It takes an hour for the water, coming up through a small hole in the bottom of the shell, to fill and sink it. When the cocoanut shell sinks, a watchman calls out the time, and sets the shell afloat to measure the next hour. A queer kind of clock, indeed! Some cocoanut shells, like the ones in the Malay boats, you can find in Hall 9, Case 38 of the R. F. Cummings collection. The ones you will see were used by Malay children as walking stilts.

Clocks today seem very different from sun dials and water clocks. When you go out of the building, look at the big clock at the north entrance to Stanley Field Hall. It is a complicated electric machine, and yet it, too, must be regulated by the sun, just as the oldest clocks in the world.

MARGARET FISHER, Guide-lecturer.

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MUSEUM STORIES
FOR
CHILDREN

SERIES III
NUMBER SIX
OCTOBER 24, 1925

FIELD MUSEUM OF NATURAL HISTORY
ROOSEVELT ROAD AND LAKE MICHIGAN
CHICAGO

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FIELD MUSEUM OF NATURAL HISTORY

In addition to the program announced for today, Mrs. Edith W. Ware, of the University of Chicago, is to tell you a story of old Egypt, "Little King Pepi and the Dwarf." It will begin at 11:00 a.m. The Museum story today tells you how time was measured in ancient Egypt and other parts of the old world.

D. C. DAVIES, Director.

MUSEUM STORIES FOR CHILDREN

SERIES III

NUMBER SEVEN

OCTOBER 31, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

FIELD MUSEUM OF NATURAL HISTORY

"The Unselfish Shell", today's colored film, shows you how shells are now used in making ornaments and souvenirs. The story tells you about similar uses to which American Indians put them long ago.

D. C. Davies, Director.

THE USE OF SHELLS AMONG AMERICAN INDIANS

Do you like to hunt for shells in the sand on the beaches? Some of the bigger ones you pick up would make good dishes for a dolls' tea party; and many of the little ones would make very pretty necklaces. All over the world, people of ancient times and many savages of modern times have used shells for dishes, for ornaments and for money.

Long ago an ancient group of Indians whom we call Mound Builders lived in the Mississippi valley. When members of the tribe died, the Indians buried with them things which they valued during life. Some people think that the Mound Builders must have put most of the things into funeral bonfires because so many show evidence of having been burned. In the James Nelson and Anna Louise Raymond Hall (Hall 4) there are broken and charred shells taken from the Hopewell mounds of Ohio; and Case 36 contains several large shells used, very likely, as drinking cups. In the same case are three mussel shells, two of which probably served as scrapers used in dressing skins, and the one with a hole in it, as a hoe. In Cases 36 and 38 you can find many fresh water clam pearls, some of which are still strung in necklaces.

When white men came to America, the Mound Builders had all disappeared, and only the mounds with their contents were left to tell of ancient Indian life in the Mississippi valley; but the white men found the Indians of the woodlands using shells for many purposes. In Hall 4, Case 32, you will find a clam shell being used as a mold to shape maple sugar candy; and in Case 34 there are some small cowrie shells strung in a necklace. A medicine bag in Case 30 has a few larger cowrie shells fastened to it for decoration.

Look in Case 43, of Hall 4, at the Indian who is sitting on the stones, and see what kind of a necklace he wears. Indian tribes all over America were skilful in cutting small discs from clam and conch shells. Then they strung the discs, like buttons, on cords or thongs. One of the medicine men from the Pomo Indian tribe of California wears a string of them around his neck; and many little strings hang from his head-dress. Even the baskets from the tribes of California are often decorated with the same kind of flat white shell buttons. See Hall 6, Case 17, for the baskets. The medicine man is close to them in the center of Hall 6.

The California tribes have given to America one of the loveliest shell decorations in the world. In the warm waters of the Pacific near the shores of southern California live many single-shelled sea animals called abalones. Look in Stanley Field Hall, Case 5, for their rainbow-colored shells. Do you think they look like great big ears? Many people have thought so and have called them Ear Shells. California Indians cut these shells into pieces to use as decorations. In Hall 6, Case 2, almost every dance skirt is decorated with large pieces of abalone, as well as with many other smaller shells. Several pretty necklaces in Case 15 are made almost entirely of abalone shells. See how many baskets you can find in Case 17, which have on them tiny bits of the lovely ear shells.

The California Indians traded with the desert tribes of the southwest. The Hopi Pueblo people would go long distances and suffer many hardships in order to bring back to their dry country shells from the great waters. These they put into the altars, believing that the much needed rain would surely come, because the shells were a part of the mighty source of rains. In Hall 7, Case 7, a Hopi Indian maiden is dressed for the corn dance. She has yellow corn pollen smeared all over her face and wears an abalone shell hanging from her neck, as a sign that rain will come to help produce a good crop of corn. In the same hall, Case 4, the gods of war and thunder also wear abalone shells; and one of the tall masked Katchina dancers in a nearby case has one fastened to a necklace of clam shell discs.

The Indians of California also traded with tribes farther north. That is why we find in Hall 4, Case 1, a Salish Indian woman wearing an abalone necklace; and on the raised platform in the same case there is a whole shell used for a dish. The Salish Indians, in turn, traded with tribes still farther north, and so we find the beautiful ear shell on many of the things made by the Indians of the North West Coast. In Mary D. Sturges Hall (Hall 3), pieces of them are used on ceremonial wooden head-dresses and dance masks, as in Cases 15 and 18; on the fighting knives, as in Cases 19 and 20; and on the dance ear-rings, as in Case 18.

If you look carefully among the cases in Halls 3 to 7 you can find several other kinds of shells which the Indians of North America liked to use for ornaments and implements. In Hall 3, Case 13, there is a dance belt with long white tooth shells from the northern waters of the Pacific; and in Case 18 there are two necklaces and a headband of the same kind of shells. The Indians of the North West Coast were skilful in fastening small rather flat shells onto the tops and sides of their wooden feast dishes. You can see these in Cases 23 and 26 of Hall 3. In Hall 5, Case 7, a dress belonging to a Plains Indian maiden has on it rows and rows of cowrie shells, as imitations of elk teeth.

Shells used by other peoples of the world can be found in the shell collections on the ground floor; in the Robert F. Cummings collections (Hall 9); in Joseph N. Field Hall (Hall 10); in Frank W. Gunsaulus Hall (Hall 30); in Hall 32; and in H. N. Higinbotham Hall (Hall 31).

MARGARET FISHER, Guide-lecturer.

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MUSEUM STORIES FOR CHILDREN

SERIES III
NUMBER SEVEN
OCTOBER 31, 1925

FIELD MUSEUM OF NATURAL HISTORY
ROOSEVELT ROAD AND LAKE MICHIGAN
CHICAGO

MUSEUM STORIES
FOR
CHILDREN

SERIES III
NUMBER EIGHT
NOVEMBER 7, 1925

FIELD MUSEUM OF NATURAL HISTORY
ROOSEVELT ROAD AND LAKE MICHIGAN
CHICAGO

FIELD MUSEUM OF NATURAL HISTORY

"The Apache Trail" will take you on a journey through the southwestern deserts and mountains. The story tells you of some of the people who once lived there.

D. C. Davies, Director.

APACHES

An earlier story told you a little about the Hopi Indians of Arizona. They, you remember, were peaceful farmers; but they had neighbors who were far from peaceful and were more restless than even the wandering hunters of the Plains. They were the Apaches, the Indians who, in the old days, were a constant menace to the Mexican border towns, the nearby Indian tribes and the white settlers. They were so fierce and fearless, in fact, that the United States had practically to surround their whole territory with military posts in order to subdue them; and trouble with them was experienced as late as the year 1886—long after most of our Indians had settled peaceably on the reservations allotted to them.

The Apaches were true nomads. Their houses were little more than huts. They were made of grass heaped over a framework of sticks; and when the Indians moved from one place to another, their deserted houses were left to fall into ruin; and new ones were erected whenever necessary.

If the Apaches had been industrious, they could have had corn fields like those of the Hopi Indians or could have raised sheep as did the neighboring Navahos; but they preferred to live on whatever the desert offered them and to add to it occasionally through raids and theft. Raids, warfare and hunting were the work of the men. To the women belonged the less exciting labor of gathering wild fruits, seeds and plants and turning them into edible form.

One desert plant which furnished them with an important food was the mescal or century plant. It grew far up on the slopes of the mountains; and an expedition to gather and prepare it was part of each year's program. Only plants which were in bud could be used. They were cut off at the root; the coarse leaves were lopped off; and the cores, something like great heads of cabbage, were steamed for forty-eight hours in a stone-lined pit. Afterwards, the mescal was pounded to a pulp, molded into cakes and dried for winter use. It could be eaten without further cooking or made into a gruel. It was very sweet. In the Department of Botany, Hall 28, in the seventh case from the east end on the north side of the room, you may find the century plant and some of its products.

In addition to mescal, the fruits of the yucca plant and of the prickly pear cactus were gathered and dried. Piñon nuts, black walnuts and acorns furnished nut foods to be eaten alone, or ground and added to other foods. Juniper berries, wild potatoes, wild onions, mesquite beans and mushrooms were eaten; and when times were very hard, the women even gathered the tiny seeds of asters and daisies and crushed them into an oily mass. Some of these foods, labelled with the strange names which the Apaches gave them, are in the fifth case from the east end on the south side of Hall 25.

The hunters added wild game to the larder. With snares and traps they caught wood-rats, rabbits, quail, water-fowl and small birds; and with arrows and spears they killed deer, antelopes and wild turkeys. You can see wood-rats and rabbits in Hall 15, deer and antelopes in Hall 16 and birds in Halls 20 and 21 (Department of Zoology).

You will not find many cases of objects made by the Apache Indians in the Museum; for, in their wandering life, they could have only things which could be moved easily from place to place. Usually the whole housekeeping outfit for an Apache family could be loaded on one horse.

For gathering and preparing foods, baskets were needed; and in Cases 46, 47 and 51, Hall 6 (Department of Anthropology), you can find many different kinds. The very large circle of basketry in Case 51 was used as a granary. The long baskets in Case 46 were burden baskets in which the women carried home their loads of fruit, seeds and plants. The smaller, shallow ones were used as we use pans and dishes; and those covered with piñon gum were water bottles.

There are a few pieces of pottery in Case 46; but pottery was too easily broken to be suited to the roaming life of the Apaches; so they made little of it.

Clothing, as you can see in Cases 48 and 49, was made from deer skin. That worn by the women was decorated with rows of fringe and metal ornaments. The men's clothing was scant and tight. They had no trailing robes or head-dresses to bother them when they fought or foraged.

The last case in the group, Case 50, shows you shirts worn by Apache medicine men. Each one is decorated with painted figures. They look like the men and women which very small girls and boys like to draw; but each one was, in the eyes of the Indians, a great god who aided in the creation of the world.

DOROTHY COCKRELL, Guide-lecturer.

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MUSEUM STORIES
FOR
CHILDREN

SERIES III

NUMBER EIGHT

NOVEMBER 7, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

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D. C. DAVIES, Director.

MUSEUM STORIES
FOR
CHILDREN

SERIES III

NUMBER NINE

NOVEMBER 14, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

FIELD MUSEUM OF NATURAL HISTORY

"Birds and Flowers" is the subject of one of the motion pictures this morning. Many birds are fond of flowers. The story will tell you about some of them.

D. C. Davies, Director.

BIRDS AND FLOWERS

Did you ever suck the nectar from the small ends of flowers, such as red clover blossoms? There are some birds which like the nectar in flowers, too. One of the flower-loving birds is the Hummingbird. Do you know how it gets that name? When it stops in front of a flower to get some food, instead of resting on a branch, the tiny bird keeps itself up in the air by moving its wings very, very rapidly. The rapid flapping makes a humming sound and that is why people say it is the Hummingbird.

Since Hummingbirds fly long distances during their migrations,—some of them even crossing the Gulf of Mexico,—they need to have very strong wing muscles. Their breast bones grow large in order to support those muscles. The skeleton of a Ruby-throated Hummingbird mounted under a glass bell in Case 131, Hall 17, shows how big the breast bone becomes. You will notice that the feet and legs are very small. That is because Hummingbirds are almost always on the wing or perching on branches; and they never use their feet to run, or walk or hop. The bill is usually long and narrow so that it can be poked far into the flowers. Some Hummingbirds have curved bills, which are helpful also.

When Hummingbirds stick out their tongues you can see, if you look very closely, that the ends are forked and hairy. The birds use their tongues to suck up all the little insects they can find hidden in the centers of flowers; for most Hummingbirds really like insects much better than sweets. Often they hunt for insects in the bright orange flowers of the Trumpet-vine. Look in the center of Hall 29, on the west side, and see if you can find the Ruby-throated Hummingbird sticking its bill into a flower on the Trumpet-vine.

The Ruby-throat is the only Hummingbird which is found in Illinois; but there are many other kinds of Hummingbirds living in Mexico, Central America and South America; and several of them have their homes in California and other western states. One brave little bird nests as far north as Alaska!

The very smallest in all the world is called the Fairy Hummingbird; and it lives in Cuba. It is never more than two and one-quarter inches long. In Case 197, Hall 21, there is a Hummingbird from Colombia called the Cayenne Fairy, but it is much larger than the Cuban Fairy. The many Hummingbirds in the case are as lovely as the gaily colored flowers among which they love to fly.

How large do you suppose a Hummingbird's egg is? The Fairy's egg is just a little bit over a quarter of an inch long. Think what a wee bird the baby must be! Hummingbirds' nests are lined carefully with plant-down and spiders' webs; and the outside is beautifully decorated with bright colored lichens and mosses. It would seem almost as if the parent birds took pride in making their homes as pretty as possible.

Most Hummingbirds are not much afraid of people. Some of them have been known to eat syrup out of a spoon! It would never do, however, to keep them in a cage; for they must fly, seeking insects in blossoms.

All the Hummingbirds in the world live on this side of the earth, most of them in South America. Away over on the other side of the world, in the big islands of Australia and New Zealand, there live a number of small birds which, like the Hummingbirds, are always seen flying around flowers, seeking insects and honey. They never hover before a flower as Hummingbirds do; but they act like tiny acrobats clinging to leaves, branches and flowers. Often they turn upside down in order to get all the nectar and all the insects out of the blossoms.

One family of these birds is called the Flower-peckers. In Case 201, Hall 21, you can find two little Flower-peckers named Diamond-birds. You would see the spotted one very often if you lived in Australia. Diamond-birds hide their babies under the ground, in round nests which are reached by means of long tunnels.

In Australia there are a great many larger birds which help the flowers to grow by taking the pollen from one flower to another. Most of these birds are known as Honeyeaters. Although they are much larger than Humming birds, they have the same kind of long, forked tongues. There are several kinds of Honeyeaters in Case 201, Hall 21. Strangely enough, although Friar-birds belong to the Honeyeater family, they are never seen around flowers. Another Honeyeater is called Garrulous because it is so noisy. Look for the queer names of some of the others.

Because the birds seek them, many flowers are given a long Greek name meaning "bird-loving." Hummingbirds, Flower-peckers and Honeyeaters may well be called "flower-lovers."

MARGARET FISHER, Guide-lecturer.

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MUSEUM STORIES
FOR
CHILDREN

SERIES III
NUMBER NINE
NOVEMBER 14, 1925

FIELD MUSEUM OF NATURAL HISTORY
ROOSEVELT ROAD AND LAKE MICHIGAN
CHICAGO

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D. C. DAVIES, Director.

MUSEUM STORIES FOR CHILDREN

SERIES III

NUMBER TEN

NOVEMBER 21, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

FIELD MUSEM OF NATURAL HISTORY

One of the films today is to show you the petrified forest of Arizona. When the Captain Marshall Field Expedition visited Argentina last year, another petrified forest was found. The story will tell you about it.

D. C. Davies, Director.

A PETRIFIED FOREST

Long ago, before the great Cordilleras of southern South America had lifted their heads, there were strange animals on earth; but the trees and grasses were much as they are now. In the great plains of South America, there were fields and forests; and near the Rio Deseado of Patagonia, there were once tall pine trees. Year after year, century after century, they stood there; and if the trees could have talked, they might have said, "This is our own land. Our ancestors first grew here long, long ago; and the seeds in our cones, planted here, will make trees long after we are dead."

But had the trees been able to think and talk, they would have been mistaken; for far down under the earth's crust, tremendous forces were surging. Gases, lava, steam and other products of the earth's hot interior were pressing upward, seeking for weak places in the surface where they might break through. They found them in the very plain where the forest stood; and not one but scores of volcanoes appeared. Showers of volcanic ash came from them; and, just as snow settles on the limbs and branches of trees in the winter, so the ashes settled on the great pine trees. The burden, at first light, became heavier and heavier; and, finally, the trees, unable to bear it longer, crashed, one by one, to the ground. There they lay, while the ashes continued to fall; and at last there were no trees to be seen,—only the great, gray plain and the smoking volcanoes behind it.

The trees, of course, were dead; but the ashes, packed tightly about them, protected them from decay. Ages passed, and gradually life began anew on the plain. Rain fell on the ashy earth and plants began to grow there. They died; and their leaves, decaying, made the earth richer and richer until, at last, it was once more able to support grass and bushes. There were no trees, however, like those of the earlier time; for the low plain had been raised far above sea level and was now a high plateau; and parts of it had even been pushed up to the height of mountains.

New streams were formed; and water from them and from the rains soaked down through the ground to the place where the old pine trees lay buried. The ashy soil contained a great deal of silica (the element you know in sand); and, as the water passed through, some of the silica was dissolved by it. It was carried to the trees; and there, as the water seeped through the wood, the silica was deposited. At first only a few woody cells were replaced by the stone; but as time went on, the change continued; and finally the trunks, branches and even cones were turned entirely to stone.

In Stanley Field Hall, Case 14, you can see the petrified wood and cones from those very pine trees. The cones are so perfectly fossilized that they look as if someone had carved them, with infinite care, from stone. On the outside, you can see each scale; and where the cones have been broken open, the seeds and the stem to which they were attached are clearly visible. Some of the pieces of wood show the bark and the rings of growth very plainly. Others had, apparently, been driftwood before their burial and petrification; and in them the ancient cracks and marks of seasoning can be seen.

In the same case, are giant fossil oysters which came from a nearby part of southern Argentina. They, of course, once lived in the ocean; but when the high plateaus and mountains arose, they found themselves on dry land. Their shells are now found as far inland as the base of the Cordilleras.

Another great sea animal whose skeleton is now found on the southern plateau, is the whale. Its jaw bones can be seen in the second case from the north end on the west side of Hall 38. In the same case are petrified skeletons of some of the land animals who may have lived in or near the pine tree forest. The glyptodont was a large animal similar to our armadillo. It differed in having a solid, instead of a jointed, shell. Indeed, as it crawled over the ground, occasionally drawing in and hiding its head, it looked much like a turtle. Near it are fossil armadillos which are more like ours. Other strange beasts were the toxodon, borhyaena and giant sloth. The small sloths and rodents resembled those we know today.

In nearby cases in Hall 38 are the petrified skeletons of animals who were living in North America at the same period. See if you can find the sabre-tooth tiger, the rhinoceros, ancient pigs, tortoises, camels, deer and horses; and be sure to notice the elotherium and titanotherium. Aren't you glad that they no longer live in the United States?

DOROTHY COCKRELL, Guide-lecturer.

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FOR
CHILDREN

SERIES III
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FIELD MUSEUM OF NATURAL HISTORY
ROOSEVELT ROAD AND LAKE MICHIGAN
CHICAGO

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D. C. DAVIES, Director.

FIELD MUSEM OF NATURAL HISTORY

MUSEUM STORIES FOR CHILDREN

SERIES III

NUMBER ELEVEN

NOVEMBER 28, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

FIELD MUSEUM OF NATURAL HISTORY

The story today tells you about some of the habits of one of our common butterflies, the Monarch.

D. C. Davies, Director.

THE BUTTERFLY

Now that cold weather has come, all the butterflies have disappeared. Do you wonder where they have gone? Some of them have died; and some have hidden in protected shelters for a long winter's sleep. There is one common butterfly which has gone to spend the winter in the warm and sunny south. That butterfly is called, commonly, the Milkweed Butterfly, because it uses the milkweed plant for food and shelter during every stage of its growth. Another name for it is Monarch.

Let us take a look at one of these large milkweed butterflies and see if it deserves the name Monarch. At the west end of Hall 19 there are three beautiful specimens of the Monarch, or Milkweed Butterfly. In the center of the case, the large one, with wings outstretched, shows well the rich reddish-brown, the velvety-black, and the white spots, which are characteristic of this butterfly. To your left, in the same case, there is a large Monarch resting with its wings folded, and there is another one flying.

The Monarch does just about what it pleases; for it does not have to be afraid of other creatures. Probably because it has a peculiar odor, and perhaps because it has a bad taste, all the butterfly-eating birds let the Monarch alone.

Several smaller butterflies of different families have taken advantage of the fact that birds will not attack the Monarch. Some of them follow along close behind the larger butterflies, seeming to seek protection in the very size of the Monarch; and a few of them mimic or copy the color and markings of the Monarch so well that they often deceive people. One of these mimics is called the Viceroy, which really means one who acts in place of a king. In Hall 19, look for the Viceroy next to the Monarch; and then try to find the mock-monarch in the Dunes Region scene at the left.

Everyone agrees that butterflies are beautiful, with their delicate, bright-colored wings. Butterflies are adult insects. When they were younger they were not nearly so beautiful. Their bodies were longer and larger; and they didn't have any wings. An old rhyme tells just what butterflies were before the lovely wings grew.

"And what's a butterfly? At best,
He's but a caterpillar, dres't."

Long before the Monarch became a proud winged creature, it was a crawling caterpillar.

The story of a butterfly's life is full of mystery. In the springtime, when the milkweed plants are beginning to put on leaves and buds, the large milkweed butterfly mother searches for the protected under parts of the plant. There she lays her eggs, fastening each one with gummy paste so that it hangs down like a tiny drop of water. In four or five days a wee green caterpillar escapes from the egg. It begins to feed on the milkweed leaf; and when it finishes that leaf it crawls to another and starts to eat again. For several weeks the caterpillar spends almost all of its time eating and growing. The body grows very rapidly; but the outer skin doesn't grow. All the time the soft flexible skin is growing just underneath. When the body becomes too large, the old skin splits along the middle of the back, and the caterpillar crawls out of it. Not many days afterwards, the bright new skin becomes too small, and it, too, must be shed. This shedding or moulting happens usually three or four times.

When the milkweed caterpillar gets to be two inches long, it is time for it to change into the beautiful Monarch butterfly. It cannot change, however, just like magic; and so it crawls into some protected place, often the underside of a milkweed leaf. It hangs head downward, fastening the end of its body to the leaf by a button of silk. The skin grows hard like a shell. The caterpillar has now become a chrysalis, and must stay quiet, as if it were sleeping, for a week or two, while underneath the hardened outer skin the caterpillar body is turning gradually into that of a butterfly. Some chrysalids show the wings of the butterfly forming underneath the almost transparent skin.

When the butterfly is fully formed, it comes out of the chrysalis shell and crawls onto the milkweed leaf. There it waits quietly for an hour or more, moving its wings slowly up and down, until strength comes into them. As soon as the wings are strong enough, away flies the full-grown Monarch.

All other butterflies grow up very much in the same way that the Milkweed Butterfly does. The Monarch, however, is thought to be one of the few which migrates, or changes its home to suit the weather. In the autumn thousands of Monarch Butterflies may be seen on their way to the south. Sometimes they rest for a while on trees which have lost their leaves. The many red-brown wings moving gently give the impression that the leaves have magically sprung into place again. You have only to shake the branches, and the air is filled with a cloud of fluttering wings.

There are several other common butterflies in Hall 19. How many of them do you know by sight and by name? Next summer hunt for the tiny eggs; and then watch the caterpillars or larvae grow and change into chrysalids or pupae; and last watch for the butterflies to stretch their wings and go sailing off and away.

MARGARET FISHER, Guide-lecturer.

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FIELD MUSEUM OF NATURAL HISTORY

The story today tells you about some of the habits of one of our common butterflies, the Monarch.

D. C. Davies, Director.

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MUSEUM STORIES FOR CHILDREN

SERIES III

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FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN
CHICAGO

MUSEUM STORIES FOR CHILDREN

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DECEMBER 5, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

FIELD MUSEUM OF NATURAL HISTORY

One of the Museum's new exhibits shows you a group of crocodiles from Honduras. The story will help you to discover how they differ from their relatives, the alligators.

D. C. Davies, Director.

ALLIGATORS AND CROCODILES

Can you tell the difference between an alligator and a crocodile? You can find some of their differences by comparing their skeletons in Hall 17; and others will appear if you examine carefully the alligator in Albert W. Harris Hall (Hall 18) and the crocodiles in the corridor between Halls 19 and 22.

In the first place, the crocodile is far more slender than the alligator. His head is narrower and his snout more pointed. His body is slimmer; and even his legs are more lightly built. If you look at the jaws closely, you can find some curious differences in the teeth. The alligator's upper jaw overlaps the lower one. The crocodile's teeth interlock; its fourth lower tooth on each side fits into a notch on the outside of the upper jaw; and its long, lower front teeth often pierce holes in the front of the upper jaw. The skins of alligators and crocodiles differ in color. Young alligators are brown or black striped with vivid yellow. As they grow older, the yellow lines fade and finally disappear. Crocodiles are usually an olive gray marked with black.

The five-toed fore feet and four-toed hind feet of both the alligator and crocodile seem very small for such large animals. Perhaps they are small because they are used so little. When on land, the alligator crawls rather than walks; and its gait is awkward and slow. The crocodile is more agile. It raises its body well above the ground; and can run rather swiftly.

Both animals are, however, more at home in the water than on land. When they lie sunning themselves on the bank, they always keep their head turned toward the water so that they can dive into it at a moment's notice. They are splendid swimmers; and in swimming, it is their great muscular tail, rather than their feet, which propels them through the water.

Practically all of their food is found in the water; and they do not use their feet in obtaining it. One snap of their great jaws is enough to catch any fish, water-bird or small mammal which may be unlucky enough to be swimming near them. Each animal's mouth is equipped with a curious valve made by a ridge at the back of the tongue which fits into a groove in the palate above it. When the animal opens its mouth under water, the valve closes and keeps the water from entering its throat. Before it can swallow, however, it must come to the surface. A valve of this kind can be seen in the open mouth of one of the crocodiles in the Museum exhibit.

Alligators were once found in large numbers in Florida and westward to the Rio Grande; but now few of them remain. Many were killed for their skin, from which luggage, pocket-books and even shoes can be made; and others were taken north, when young, by tourists, there to die slowly of starvation. The few that are left live in the hidden swamps, bayous and lakes near the south coast.

Mother alligators often lay several dozen eggs in one nest. The eggs are from two to four inches long and have a very tough, hard shell. They are deposited in mounds of dead leaves and sticks; carefully covered; and hatched by the warmth of the sun and the decaying leaves. Meanwhile the mother remains near the nest ready to defend it from all enemies. When involved in a fight, she uses both her teeth and tail as weapons. A blow dealt by an alligator's tail can break a man's leg. The nests are built near shallow water; and as soon as the baby alligators are hatched, they make their way into it; and begin to feed on the small fish which abound there.

Alligators are found in the fresh water of streams and lakes. Crocodiles usually make their home in salt water marshes. In the United States, they occur only in southern Florida; but to the south, in Mexico and Central America, they are abundant. None of the American crocodiles share the bad reputation of those which live in Asia and Africa. Some of them are known to be dangerous to man, while the American crocodiles are, for the most part, quite timid.

Many absurd stories have been told of the great size and age of alligators. It was once thought that they grew only two feet in fifteen years and that a large alligator, must therefore, be very old. In later years, the habits of these animals have been studied closely both in their native haunts and in zoological parks. Eggs have been obtained and hatched; and the growth of the animals watched over a period of years. In captivity, alligators have been known to grow as much as a foot a year; and when they are living in freedom, their growth may be even greater. Alligators fourteen to fifteen feet in length used to be found in Florida. When the hunting of them began, the large ones were the first to be killed; and now animals twelve feet in length are rare.

DOROTHY COCKRELL, Guide-lecturer.

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MUSEUM STORIES
FOR
CHILDREN

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FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

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D. C. DAVIES, Director.

FIELD MUSEUM OF NATURAL HISTORY

MUSEUM STORIES FOR CHILDREN

SERIES III

NUMBER THIRTEEN

DECEMBER 12, 1925

FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

CHICAGO

FIELD MUSEUM OF NATURAL HISTORY

On next Saturday, December 19th, there will be two Museum events for children. Motion pictures will be shown, as usual, in the morning; and at three o'clock in the afternoon, Mr. A. T. Freeman (Gai-i-wah-go-wah), a Sioux Indian will give a program of "Indian Life in Song and Story" especially for boys and girls.

D. C. DAVIES, Director.

THE USE OF FEATHERS AMONG THE PEOPLES OF THE WORLD

If you were to go on a trip around the world, you would find people of many lands using feathers for decoration. You may like to take a trip, instead, around the Field Museum, hunting feathers on robes, head-dresses, dance skirts, and ornaments.

Beginning with arctic regions, in Mary D. Sturges Hall (Hall 3) you will find feathers of the wild duck used to make a complete Eskimo coat. The feather garment, in Case 12, was made by sewing together with sinew thread whole duck skins with their feathers attached. Although such a suit is warm and comfortable, it is usually worn only by those who cannot afford fur clothing.

Among the Indians of North America, feathers were used in a number of ways. Many war bonnets which belonged to chieftains of the Great Plains are to be found in Hall 5, in Cases 5, 7, 9, 20, 27, 34 and 44. The chiefs who once owned those war bonnets must have been very great, for every eagle feather which was put into a head-dress had to be earned by a brave deed.

Amont other Indians who have made use of feathers for the decoration of head-dresses are the tribes of the Pacific coast. They made many beautiful head-bands by gumming small feathers onto strips of soft leather. In Hall 6, Case 15, you will find a head-band to which have been attached feathers from the throats of seventy-one humming-birds. In Case 1 of the same hall there are several head-bands made with red feathers from the woodpecker.

Since birds of the tropics usually have bright colored feathers, it is not at all surprising to find Indian tribes of South American tropical regions using feathers for their dance skirts, head-dresses, and even bracelets, anklets and necklaces. In Hall 8, there are two gaily colored feather dance skirts and some feather head-dresses in Case 16. Cases 8, 20 and 21 are filled with bracelets, anklets, necklaces and other feather ornaments. These all belonged to modern Indian tribes.

The famous Incas of ancient South America decorated some of their clothing with feathers also. Buried with their mummied chiefs have been found feather ponchos, made with great care. A piece of one of these can be seen in Case 47 of Hall 8. The Incas bent the quills so that the feathers could be hung and firmly tied on strings which were stretched across the cloth and sewed in place. The upper rows of feathers over-lapped the lower ones so that the finished poncho looked as though it were made entirely of feathers. Different colored feathers were arranged so as to form a design.

In Asia, feathers are often used for decoration. The Chinese are skilful in using blue kingfisher feathers as an inlay in silver jewelry and screens. Three Manchu head-dresses in Stanley Field Hall, Case 24, have on them kingfisher feather ornaments.

In the South Seas there are wild tribes who make immense masks covered with feathers. These masks are made once in two or three years, for their ceremonial dances; and when the dances are over, the masks are taken to pieces and the feathers from them stored away until the next ceremonial season. Four big masks from New Guinea can be found in Case 47 of Joseph N. Field Hall (Hall 10).

Some of the finest feather robes in the world have been made by the native Maoris of New Zealand. Several of these you will find in Hall F, on the ground floor. Three beautiful feather robes which belonged to Maori chiefs are draped in native fashion in Case 14; and several other flax robes decorated with yarn and feathers are shown in Cases 16 and 17. Chieftains valued highly robes made with the narrow brown feathers of the native kiwi bird. A robe of kiwi feathers such as is shown in Case 14 would contain as many as 63,000 feathers. Feathers used commonly were those of the pigeon. Several varieties of parrot feathers were used also. On one robe in Case 16, and another in Case 17, there are peacock feathers obtained through trade with Europeans.

The Maoris had an unusual way of making their feather robes. First they prepared the wild native flax for weaving. Then they knotted small bunches of feathers into the thread, and wove the feathers with the thread into the robe. The workers were very skilful in weaving in designs of different colors; and the feathers over-lapped so that the completed robes resembled the plumage of birds.

Feathers from the kiwi bird, from pigeons and from parrots were rather easy to get, for there were many of these birds in New Zealand. But in order to get the feathers of the rarer and wilder birds, men were specially trained as bird hunters. They had to study the habits of the birds so that they could snare, trap or shoot as many as possible. Sometimes birds were caught alive and released after some of the bright feathers had been plucked.

In the Hawaiian Islands, where war chiefs used to wear long feather robes into battle, many birds were kept alive in cages so that their feathers might be plucked to ornament the garments of the nobles. In Case 35, Hall F, you can see specimens of three birds commonly kept for feathers, the oo, the iiwi, and the apapanl. In the same case are two feather fly flaps, a necklace and a feather cape.

MARGARET FISHER, Guide-lecturer.

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ROOSEVELT ROAD AND LAKE MICHIGAN
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FIELD MUSEUM OF NATURAL HISTORY

ROOSEVELT ROAD AND LAKE MICHIGAN

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The motion pictures this morning are the last of the fall series; but there will be special entertainments for children from time to time all through the winter. Watch the papers for announcements.

D. C. Davies, Director.

SCARABAEIDS AND TIGER BEETLES

The ancient Egyptians did not understand nature as we do now; and they had many strange ideas about it. The queer habits of a certain large beetle attracted their attention and caused them to think that it shared the magic power of their gods. The beetle was the one now known as scarabaeus. It was about an inch long and was dark green in color.

Each year the Egyptians saw hundreds of these insects digging holes in the ground; and rolling into them balls of food. The beetles attracted attention because of their queer antics as they kicked the balls with their hind legs, even standing on their heads as they crawled backwards. The Egyptians probably thought that the beetles had been digging their own burial places; and that the balls were the food which they had provided for their life in the land of the dead. This idea was not at all strange to the Egyptians; for they were accustomed to burying food with their mummies.

About a month later the Egyptians were much surprised to see beetles exactly like the ones which had gone into the ground, emerging from the same holes. Very likely they thought that these insects were the same beetles coming back to life; and so they called the scarabaeus the Sacred Beetle, symbol of life after death.

Some of the earliest Egyptians placed real beetles in jars and buried them beside the mummies so that their magic power might possibly help the dead people to come to life again. Later Egyptians made models of beetles out of clay, stone, bronze or glass. These images, which are now known as scarabs, were placed in the linen wrappings on the bodies of the mummies. A charm, a prayer to the gods, or the name of a king, priest or noble was almost always engraved on the under side of the scarabs. They were usually placed just over the heart; and were supposed to protect the mummy in the spirit world.

Since scarabs were especially sacred to the god of the dead, who was also the god of the living, the Egyptians soon began to wear the scarab as jewelry, in honor of that great god. One Pharaoh of Egypt had a great many scarabs made with inscriptions on them telling of his wedding, and of his hunting expeditions. Scarabs were used sometimes as seals to mark letters.

Scarabs have been found carved on the walls of tombs and on the sides of sarcophagi; and pictures have been found painted on coffins and also in the Book of the Dead. In the Egyptian collections on the ground floor you can find many scarabs. In Case 9, there are two large stone scarabs with wings folded, which are like many of those found in the wrappings of the mummies. One large green scarab in the same case has outstretched wings. Nineteen little clay scarabs are glazed blue-green; and are of the kind which were very common in Egypt. At the head of a carved wooden coffin in the center of the hall is painted a large sacred beetle. Perhaps you can find scarabs painted on other coffins in the hall. On the north wall, in the Book of the Dead, one of the gods has a scarab for a head. See if you can find other pictures or carvings of these sacred beetles.

The Egyptians believed that the beetles came back to life after being dead and buried. Do you know what really happened? The mother beetles laid eggs in the balls of food. In a warm snug nest under the ground the eggs hatched into grubs or worms. After they had eaten all the food which had been placed in their nests, and had grown fat, they curled up into soft tight-skinned balls and lay still in the ground for a while. All the time underneath the skin the grubs were changing into beetles; and when the change was complete they crawled out of the ground and began to fly.

Scarabaeids are really the first cousins of the June bugs, which are quite common here in Illinois. Another common beetle in this region is the Tiger beetle. These little insects have earned their name not only because of their brown and yellow striped backs, but especially because of their ferocity and their quick movements. Even the baby Tiger beetles or grubs are fierce and active in capturing food. They hide in burrows in the ground, with their mouths wide open at the entrance, always ready to snap up the first unlucky insect which crawls past that living trap. At the west end of Hall 19, among the insects of the Dune Region, you can find two full-grown Tiger beetles. In the same case you will see several other common beetles.

Perhaps next summer you may begin to make a collection of insects; and in that way you will become familiar with the interesting habits of many more beetles besides the scarabaeids and the Tiger beetles.

MARGARET FISHER, Guide-lecturer.

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